

Emerging Technologies 2000

American Vacuum Society - New Mexico Chapter

Second Announcement

SYMPOSIUM

May 24-25, 2000

NEW ABSTRACT DEADLINE
April 21, 2000

VENDOR SHOW

May 25, 2000

SHORT COURSES

May 22 - 26, 2000

Wyndham Albuquerque Hotel
at International Sunport
2910 Yale Blvd SE
Albuquerque, NM 87106

Hotel Information

Room Rates are \$99 single and \$109 double occupancy, plus tax. The cut-off date for the group rate reservations is **April 21, 2000**. After that date rooms will be available at the symposium rate on a space available basis. To obtain symposium rates, be sure to identify yourself as an attendee of the 36th AVS/NMC Symposium, short course or vendor show. For more information, contact:

Cheryl M. Brozena
2000 AVS/NMC Local Arrangements
209 Farris Engineering Center
Chemical and Nuclear Engineering
University of New Mexico
Albuquerque, NM 87131
505 277.2225
cbrozena@unm.edu

The Vendor Show will be held May 25th and will include state of the art vacuum technology, surface analysis and thin film deposition equipment from approximately 40 vendors. Companies interested in exhibiting at the show should contact the Vendor Show Coordinator, Guild Copeland at 505 284.2694 or gcopeavs@aol.com

PRELIMINARY LIST OF VENDORS

Albuquerque Valve & Fitting Co.	
MDC Vacuum Products Corp.	
Kratos Analytical	Ceramaseal
Kurt J. Lesker Co.	Scientific Sales Associates, Inc.
VAT	Key High Vacuum
El Dorado Sol, Ltd	Southwest Hyvac Rebuilding
Ebara Technologies Inc.	Pfeiffer Vacuum
Physical Electronics Inc.	MDC Vacuum Products Corp.
Ktech Corporation	Transfer Engineering
MDC Vacuum Products Corp.	Themionics Vacuum Products
Nor-Cal Products, Inc.	Pentagon Technologies
U-C Components, Inc.	Leybold Inficon
Huntington Mechanical Labs	Brush Wellman Inc.
	Williams Associates
	Bennett & Co.

Vendor Show



Join Us

Emerging Technologies 2000

May 22 - 26, 2000

Gateway to New Mexico the Wyndham Albuquerque Hotel lobby is exactly one mile above sea level. The Wyndham, located on Yale SE, right at the Sunport's (Albuquerque's airport) front door and around the corner from I-25, is easily accessible from Intel, Philips, Motorola, LANL, SNL, Kirtland, and UNM. Whether you are coming for a short course, the Symposium or Vendor Show, plan on spending a couple extra days and play the UNM Championship Golf Course, visit Old Town or hike the LaLuz trail to Sandia Peak.

**WYNDHAM ALBUQUERQUE HOTEL
AT INTERNATIONAL SUNPORT
2910 YALE BLVD SE
ALBUQUERQUE, NM 87106
505 843.7000**

A variety of short courses that focus on different aspects of vacuum science and technology will be offered during the week of May 22-26, 2000 at the same venue. AVS/NMC will be offering its 5-day, hands-on training course on "Basic Vacuum Technology" as well as the following:

Short Courses

Safety Concerns in the Use of Vacuum Equipment
Vacuum Vessel Engineering
Chemical Mechanical Planarization for Microelectronics Manufacturing
Vacuum Sealing and Joining Techniques
Sputter Deposition
Materials and Surface Microcharacterization and Analysis
Partial Pressure Analyzers: Analysis and Applications
Recent Advances in Vacuum Technology
Reactive Sputtering and Deposition
Plasma Etching and Reactive Ion Etching
Operation and Maintenance of Vacuum Pumping Systems

Printed announcements including detailed short course descriptions can be requested by contacting Dr. Heidi Ruffner at 505 272.7609 or fax 505 296.3816. Additional information can be accessed via the AVS/NMC website at <http://nmavs.lanl.gov/course.html>

Detailed descriptions of most of the short courses are also available at the AVS National website <http://www.vacuum.org/catalog/catalog.html>

**CHERYL M. BROZENA
AVS/NMC LOCAL ARRANGEMENTS
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CHEMICAL AND NUCLEAR ENGINEERING
UNIVERSITY OF NEW MEXICO
ALBUQUERQUE, NM 87131-1341**

THE 36TH ANNUAL SYMPOSIUM OF THE NEW MEXICO CHAPTER OF

TECHNICAL PROGRAM CHAIRS

Linda M. Cecchi, Sandia National Laboratories

Joseph L. Cecchi, University of New Mexico

The New Mexico Chapter of the American Vacuum Society solicits contributed papers for the 36th Annual AVS/NMC Symposium. Details on abstract submission are given below. For 2000, the Symposium program features emerging technologies and scientific advancements in biomaterial interfaces, nanometer scale science and technology, micro-electro-mechanical systems, and semiconductor technology, with both invited and contributed papers in each of these areas. Within the framework of these topics, contributed papers that represent the traditional strengths of the AVS/NMC community, such as surface science, thin films, electronic materials, and plasma science and technology, are particularly encouraged. Details of each of the four sessions are as follows:

SESSION 1: Biomaterial Interfaces/Devices and Surfaces for Biotechnology

Session Program Committee: Gabriel P. Lopez (Chair), University of New Mexico

Terry A. Michalske, Sandia National Laboratories

Basil Swanson, Los Alamos National Laboratory

David Whitten, Los Alamos National Laboratory

Invited Speakers

PROFESSOR CHARLES T. CAMPBELL
Center for Nanotechnology
University of Washington

PROFESSOR DAVID J. ODDE
Dept. of Biomedical Engr.
University of Minnesota

Recent years have witnessed increased biotechnological activity within the New Mexico scientific and technical community. This activity includes research into biosensors, micro-bioanalytical systems, biomaterials, genomics and proteomics. These topics have potential implications and direct linkages to the more traditional AVS/NMC strengths in surface science, thin films, and materials processing. The goal of this session is to provide an overview of the breadth of local activities that are related to the interests of the International Biomaterial Interfaces Group of the AVS (see page 23 of the Program for the 46th International Symposium of the AVS). A diverse set of speakers representing efforts that exemplify the new level of biotechnological activities in New Mexico are encouraged to participate.

SESSION 2: Nanometer Scale Science and Technology

Session Program Committee: Mark T. Paffett, (Chair), Los Alamos National Laboratory

Neil D. Shinn, Sandia National Laboratories

Invited Speakers

PROFESSOR FRANZ HIMPSEL
Dept. of Physics
University of Wisconsin

DR. DAVID JESSON
Oak Ridge National Lab

The emerging fields of nano-science and nano-technology have had, and will continue to have, a profound influence on the miniaturization of the electronic devices ubiquitous in the modern world. In this session we will cover novel uses of nano-technology in information storage, molecular scale electronics (quantum wires and dots), nano-patterning (lithography), and uses of nano-tubule technologies (sensors and emitters). The impact of these technologies in traditional electronic areas and their potential import into unique and non-traditional areas will be addressed. The cross fertilization of concepts and technologies in miniaturized sensing and control functions will be emphasized in concert with Session 1 and Session 3.

SESSION 3: Micro-Electro-Mechanical Systems (MEMS)/ Stiction, Friction, and Wear in Micromachines

Session Program Committee Chair: Bruce C. Bunker, Sandia National Laboratories

Invited Speakers

PROFESSOR SCOTT PERRY
University of Houston

PROFESSOR XIAOYANG ZHU
University of Minnesota

Within the last ten years, there has been a revolution in the development of machinery that can be fabricated on semiconductor chips. However, as component sizes decrease and micromachine complexity increases, it is becoming more apparent that interfacial interactions are critical to the fabrication, performance, and reliability of such devices. The goal of this session is to highlight the role that surfaces play in controlling phenomena such as stiction, friction, and wear in micromachines. Papers are being solicited involving topics such as: 1) the basic science of adhesion, friction, and wear, 2) the modification of surfaces to control phenomena such as friction and stiction, and 3) applied research dealing with the relationships between interfacial interactions and the performance of actual micromachines. The latter topic will highlight recent developments in micromachines, particularly those achieved at Sandia, Los Alamos and UNM.

THE AMERICAN VACUUM SOCIETY

SESSION 4: Advanced Materials, Processing, and Analysis for Semiconductors

Session Program Committee: Seethambal S Mani

(Chair), Sandia National Laboratories

Matthew G. Blain, Sandia National Laboratories

Randy J. Shul, Sandia National Laboratories

Jerry M. Soden, Sandia National Laboratories

Invited Speakers

PROFESSOR HERB SAWIN
Dept. of Chemical Engr.
MIT

PROFESSOR JANE P. CHANG
Dept. of Chemical Engr.
UCLA

This session is broad in scope in that invited and contributed papers will cover a range of topics that have historically been covered in the AVS/NMC Symposium. These topics include novel semiconductor devices, new analytical techniques for materials and devices, and advances in the materials, diagnostics, and processing of semiconductors, including silicon and compound semiconductors. Papers are being solicited involving topics such as: 1) rapid analysis tools and techniques for wafer fabrication, 2) enabling process techniques (such as plasma processing and chemical mechanical polishing), 3) modeling of fabrication processes and semiconductor devices, and 4) surface and plasma science applied to the understanding of semiconductor devices and fabrication processes.

ABSTRACT SUBMISSION

Abstracts for contributed papers must be submitted by e-mail to cbrozena@unm.edu, either as MS Word file or in the body of the e-mail. The new abstract deadline is **April 21, 2000**. Abstracts should include: 1) the intended session, 2) paper title, 3) authors' names, 4) authors' affiliations, and 5) e-mail address for correspondence. A total of 20 minutes will be allotted for the presentation and discussion of contributed papers.

STUDENT FINANCIAL ASSISTANCE

Support is available for students presenting papers at the Symposium. Request must be made at the time abstract is submitted. Details will be provided with paper acceptance notification.

STUDENT AWARDS

Students should indicate their interest in the competition and request for financial assistance when they submit their abstracts.

1st Place Award

All expense paid trip to the National Meeting - Boston

Please enter information as you wish it to appear on your Name Badge and Attendees List

Name: _____

Company Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Email: _____

- ☐ Symposium Registration • \$150.00
- ☐ Full Time University Student • Free
- ☐ Presenting a paper to be considered for the Student Award
- ☐ Will attend Chapter Member Luncheon • May 24

Method of Payment

Check • Payable to AVS/NMC

☐ Visa ☐ Master Card

Credit Card # _____

Expiration date: _____

Authorized Signature: _____

Ways to register

1 Mail registration form and payment to:

Cheryl M. Brozena
Chemical and Nuclear Engineering
209 Farris Engineering Center
University of New Mexico
Albuquerque, NM 87131-1341
Phone: 505 277.2225
505 277.5431

2 Online Registration

www.nmavs.lanl.gov
www-chne.unm.edu

3 Fax Registration

505 277.5433

4 Email Registration

cbrozena@unm.edu

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